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DEPARTMENT OF AGRICULTURE

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL BRANCH
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

PLANT PEST SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Pest Survey Section
Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 7 March 29, 1957 Number 13

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

EUROPEAN CORN BORER survival 67-80 percent in four Illinois counties. (p.231). Percent survival higher than in 1956 in South Dakota. (p.239).

SPOTTED ALFALFA APHID survived winter in low numbers in northwest Arkansas and populations continue low in Oklahoma. Aphids observed in areas of northeast Kansas. (p.231).

ALFALFA WEEVIL range in North Carolina extended through Piedmont area of State; many fields need protection to save first cutting. Infestations medium to heavy in Virginia. (p.232).

APHIDS hatching on apple in southern areas of Illinois and Indiana. (p.233).

High POTATO PSYLLID populations in spring breeding areas indicate possible large northward movement later into Colorado, Utah, Wyoming, and Nebraska if conditions favorable. (p.234).

PINK BOLLWORM surveys indicate high survival in San Angelo and eastern Lubbock, Texas, districts but numbers lower in surface debris than last year in the southern area and mortality high in El Paso area. (p.234).

Areas to be sprayed in the GYPSY MOTH eradication program in the Northeast. (p.236).

MOSQUITOES very heavy in areas of Louisiana. (p.236).

SUMMARY OF INSECT CONDITIONS - 1956 - Wisconsin. (p.240).

Due to increased interest in IMPORTED FIRE ANT problem in several Southern States, a short summary has been prepared on the pest. (pp.245-246). Additional reports. (p.238).

Distribution of RANGE GRASSHOPPERS. (p.247).

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Reports in this issue are for the week ending March 22 unless otherwise designated.

WEATHER OF THE WEEK ENDING MARCH 25, 1957

An early spring snowstorm, accompanied by winds of 40 to 60 m.p.h. and gusts at times exceeding 70 m.p.h. raged over southwestern Nebraska, eastern Colorado, the northeastern corner of New Mexico, the Panhandles of Texas and Oklahoma, and most of Kansas during the weekend. New fallen snow of some 4 to 16 inches was whirled into the air, and on the ground drifted to depths of 20 feet or more. Trains became stranded, automobiles were marooned, and mainly as a result of the latter, 40 or more lives were lost. As the storm center moved eastward on Monday, winds diminished but snowfalls were heavy in southwestern Nebraska, northern Missouri, and southern Iowa, and lesser amounts were reported eastward into Lower Michigan. West of the storm center winds raised dust and locally severe storms of this nature were observed in Colorado. The heavy snows, in addition to earlier rains of the week, brought beneficial moisture to the drought area from eastern and northern Texas into the central Plains region and the middle Mississippi Valley. Weekly precipitation totals exceeded 1 inch over most of this area and 2 inches in portions of the Texas and Oklahoma Panhandles, southwestern and eastern Kansas, and much of central Missouri. Amounts were also moderate to heavy in western Oregon and Washington, the southwestern Lakes region, along the Atlantic coast, and throughout the Southeast with the exception of the southern tips of Texas and Florida. Temperatures for the week averaged below normal in western and central sections of the country and above normal in coastal portions of the Gulf States and north of a line extending from Omak, Washington, to Lander, Wyoming, thence eastward to the Maryland coast. Greatest departures were -7° observed in the southern and central Plains States and +11° observed in northern North Dakota. Some of the warmest weather of the season for the Dakotas and Minnesota occurred on Wednesday and Thursday as temperatures climbed into the 60's and melted the snow cover. Early in the period one of the heaviest snowstorms of the winter deposited depths of 6 inches in Rhode Island and northeastern Connecticut, but here the snow cover had disappeared by Friday. Snow cover remains in northern Minnesota, Wisconsin, Michigan, and the New England States where depths range from 4 to 16 inches and in the Central Plains area hit by the weekend storm. Depths at higher elevations in the Far West this week are 206 inches at Mount Baker Lodge, Washington, 129 inches at Crater Lake, Oregon, and 65 inches at Twin Lakes, California. An ice jam at Sioux Falls, Iowa caused brief concern to South Dakota on Sunday until it broke. Ice thickness reports include 2 inches at Huron, South Dakota, and Marquette, Michigan; 12 inches at Fargo, North Dakota; 19 inches at Duluth, Minnesota; 22 inches at Escanaba, Michigan, and 31 inches at Greenville, Maine. (Summary Supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

EUROPEAN CORN BORER (*Pyrausta nubilalis*) - ILLINOIS - Percent survival in 4 counties is as follows: LaSalle - 67; Knox - 75; Champaign - 74; Macon - 80. (Ill. Ins. Rept.).

Corn earworm damage to dent corn in Illinois and southern Wisconsin slightly greater in 1956 than in 1955. A survey of earworm damage to dent corn was made in 93 fields in Illinois and 4 fields in southern Wisconsin. The fields represented uniform east-west and north-south sampling. Damage to the immature corn ranged from 4.01 percent between the 37th and 38th parallels of latitude to 0.15 percent north of the 42nd parallel in Illinois. Damage to mature corn ranged from 0.49 percent between the 38th and 39th parallels in Illinois to 0.03 percent north of the 42nd parallel in Wisconsin. Damage in Illinois was more than $4 million in 1956 as compared with $3.9 million in 1955, $19 million in 1954 and $10 million in 1953. (Bigger, Blanchard).

APHIDS - ARIZONA - Severe in spots in several barley fields in Phoenix area on March 20. Just under heads in dough stage. Damage minor. (Ariz. Coop. Rept.). CALIFORNIA - Infestation of *Macrosiphum dirhodum* light on barley in San Bernardino County. (Cal. Coop. Rept., Mar. 15). TEXAS - Infestations of *Rhopalosiphum maidis* averaged 5 per 10 sweeps in barley in Rockwall County. (Hawkins).

GREENBUG (*Toxoptera graminum*) - OKLAHOMA - Occasionally found in one wheat field in Garfield County. (Coppock). TEXAS - Populations light on oats in Dimmit and Zavala Counties. (Chada, Richardson).

BROWN WHEAT MITE (*Petrobia latens*)- OKLAHOMA - Populations in Garfield, Major, Dewey and Blaine Counties ran from 0 to 125 per linear foot of row. Most fields averaged 20 to 40 per linear foot. (Coppock).

ARMYWORM (*Pseudaletia unipuncta*) - LOUISIANA - Continued very low larval populations in East Baton Rouge Parish. (Oliver).

FALL ARMYWORM (*Laphygma frugiperda*) - TEXAS - Light infestation on oats in Zavala County. (Richardson).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - OKLAHOMA - Populations in small grains in western Major County generally from 2 to 5 larvae per square yard with few fields up to 11 and 12 per yard. Light to moderate damage in latter fields. Infestations in eastern Major, Garfield, Dewey and northern Blaine Counties generally lighter, with 0 to 4 per square yard. Most cutworms fairly early instar. Few alfalfa fields in Altus area sprayed. (Coppock).

STINK BUGS - FLORIDA - Average number of adults per 500 sweeps in oats at Gainesville was as follows: *Euschistus servus* - 2, *Nezara viridula* - 15, *Thyanta custator* - 1. *N. viridula* averaged 4 per 100 sweeps in lupine. (Mead).

SPOTTED ALFALFA APHID - OKLAHOMA - Continuing low in Garfield, Major, Dewey and northern Blaine Counties ranging from 0 to 225 per square foot of alfalfa crown. None found some fields. (Coppock). KANSAS - Few in open fields in Marshall and Riley Counties, northeast area. In protected areas in Riley, Pottawatomie and Geary Counties, northeast, aphids readily observed in fields. Slight buildup of population compared with previous week. (Burkhardt, Simpson, Mar. 16). Found in protected areas along roadside in southern Pottawatomie County; none found in northern Wabaunsee County. Populations increased over past week. (Matthew). ARIZONA - No damaging numbers on new plantings of alfalfa in Cochise County, but some damage to old alfalfa after cutting. (Ariz. Coop. Rept.). TEXAS - Light infestations on alfalfa in Irion County. First record in county. (Boyd). Heavy populations on alfalfa at Experiment Station in Lubbock County. (Owen). ARKANSAS Survived winter in very low numbers in northwest area. (Warren). VIRGINIA - None observed to date. (Morris).

PEA APHID (Macrosiphum pisi) - KANSAS - Found on alfalfa plants one survey stop in Pottawatomie County. Population increased during week; winged forms now present. (Matthew). ARKANSAS - Light infestation, 0 to 2 per sweep, in alfalfa and vetch in Conway, Pulaski, Lonoke, Lafayette and Miller Counties. Several stages present. (Warren). LOUISIANA - Populations moderate on burclover and vetch, 300 to 600 per 100 sweeps, in East Baton Rouge, West Baton Rouge, Ascension, Iberville, Tangipahoa and West Feliciana Parishes. Taken in alfalfa at 300 per 100 sweeps in Ascension and East Baton Rouge Parishes. (Oliver). VIRGINIA - Infestations ranged from 3 to 37 per sweep in fields in Appomattox, Botetourt, Rockbridge, Pittsylvania and Henry Counties. Infestations showing no signs of becoming heavy enough to need insecticidal controls. Natural enemies are present. (Morris).

CLOVER MITE (Bryobia praetiosa) - KANSAS - Economic numbers on roadside alfalfa in localized area of southwest Pottawatomie County. Feeding injury readily observed. (Matthew).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - FLORIDA - Adults averaged 3 per 100 sweeps on lupine at Gainesville. (Mead).

LEAFHOPPERS - LOUISIANA - Numerous Empoasca sp. in burclover and sweetclover with 50 to 100 per 100 sweeps in East Baton Rouge Parish. (Oliver).

VARIEGATED CUTWORM (Peridroma margaritosa) - TEXAS - Larvae, all instars, averaged 20 per 10 sweeps in alfalfa in Brazos County. (Davis).

GREEN CLOVERWORM (Plathypena scabra) - ARKANSAS - Two to three per sweep; heaviest in vetch in Lafayette County. (Warren). LOUISIANA - Populations 20 per 100 sweeps in alfalfa in Ascension and East Baton Rouge Parishes. (Oliver).

ALFALFA WEEVIL (Hypera postica) - NORTH CAROLINA - Larvae inflicting moderate to severe damage to alfalfa in eastern Piedmont from Virginia to South Carolina. Many fields need immediate protection to save first cutting. Found as far west as Iredell and Gaston Counties; critical area at present is east of Davidson and Union Counties. New counties found infested: Anson, Chatham, Davidson, Davie, Durham, Gaston, Iredell, Johnston, Mecklenburg, Montgomery, Moore, Orange, Randolph, Richmond, Stanly and Union. (Jones, Farrier, Dogger). VIRGINIA - Infestations vary from medium to heavy in infested areas of the State. Found for the first time in Henry County. Cold weather expected to retard development of larvae and alfalfa for week or more. (Rowell, Evans, Morris).

CLOVER LEAF WEEVIL (Hypera punctata)-KANSAS - Larvae actively feeding in nearly all alfalfa fields in southeastern counties; 0 to 9 per crown. (Matthew, Mar. 16). VIRGINIA - Larval populations 8 per 100 sweeps in field in Rockbridge County and adults on red clover at Warsaw. (Taylor, Rowell).

CLOVER ROOT CURCULIO (Sitona hispidula) - VIRGINIA - Adults 26 per 100 sweeps in Botetourt County alfalfa field. (Morris).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Larvae are medium and feeding in top 3 inches of soil on grass roots some pastures and lawns in Sedley area of Southampton County. (Harrell).

A GROUND PEARL (Prob. Margarodes sp.)- ARIZONA - Scattered in 40 acres northeast of Chandler, Maricopa County on March 18. Land was pastured then planted in sorghum. Has been fallow since. Specimens similar to specimens taken on roots of Bermuda grass at Phoenix. (Ariz. Coop. Rept.).

WHITE-FRINGED BEETLE (Graphognathus sp.) - FLORIDA - Found for first time in Gadsden County, approximately 2 miles east of Chattahoochee. In Jackson County, total of 2,259 acres, involving 23 new properties found infested during February. (PPC, Sou. Reg.).

FRUIT INSECTS

APHIDS - ILLINOIS - First eggs hatched in opening apple buds in Centralia, March 19. (Chandler). INDIANA - *Aphis pomi* have hatched and feeding on bud tips in Vincennes area. Overwintering eggs more abundant than usual, this area. (Hamilton).

EUROPEAN RED MITE (*Metatetranychus ulmi*)- INDIANA - No hatch of eggs apparent in Vincennes area. Carryover of eggs light to moderate most orchards. Eggs very abundant in damson plum orchards. (Hamilton).

SCALES - ILLINOIS - In unsprayed tests at Carbondale, survival of *Aspidiotus forbesi* was 59 percent and *A. perniciosus* was 44 percent. Mortality considered normal. (Chandler). INDIANA - Infestations of *A. forbesi* generally light in Vincennes apple orchards though light to moderate infestations observed several orchards. Populations slightly higher than spring of 1955. (Hamilton).

CODLING MOTH (*Carpocapsa pomonella*) - ILLINOIS - No pupation as yet. Unusually low mortality in cages at Carbondale, Anna and Villa Ridge. (Chandler, Mar. 20).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - FLORIDA - During first two weeks of March, one new infestation in rural area near Frostproof in Polk County; and two recurrences, one at Winter Haven, Polk County and one just south of Oneca, Manatee County were reported. During February 45,938 traps are in operation with most using new lure ENT 21478; however oil of angelica still being used in Fort Lauderdale, Miami, Fort Myers, Tampa and St. Petersburg. (PPC, Sou. Reg.). TEXAS - No positive specimens collected in 240 traps operated in Cameron and Hidalgo Counties and 23 in Winter Garden area of Eagle Pass district during February. (PPC, Sou. Reg.).

BURROWING NEMATODE (*Radopholus similis*) - FLORIDA - Surveys were conducted in 21 counties during February, with more than 90 percent of survey devoted to inspections of nurseries in Hillsborough, Brevard, Indian River, Polk and Hardee Counties. Total of 19,152 root samples were processed of which 233 were determined positive. Initial infestations found in 8 citrus groves, 10 other citrus nurseries, 3 ornamental nurseries and 3 miscellaneous properties. (PPC, Sou. Reg.).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - TEXAS - Total of 42,895 trees inspected on 1,494 properties during February in Hidalgo, Cameron and Willacy Counties with no indication of infestation found. (PPC, Sou. Reg.).

TRUCK CROP INSECTS

GREEN PEACH APHID (*Myzus persicae*) - LOUISIANA - Averaged one per 2 Irish potato plants in approximately 90 acres in Iberville Parish in association with about one flea beetle per 5 plants. (Oliver).

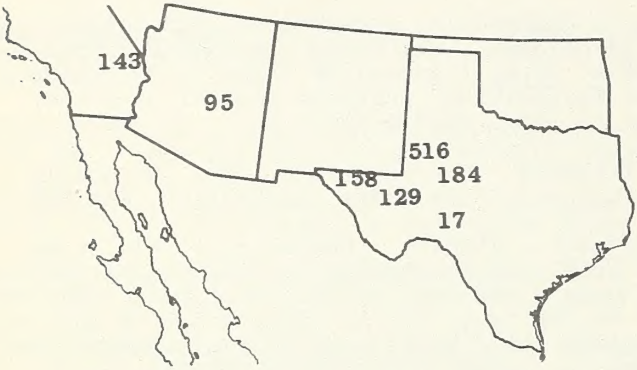
TOMATOWORMS - TEXAS - Severe damage to tomatoes caused by *Heliothis zea* and hornworms in fields scattered over lower Rio Grande Valley. (Deer).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - FLORIDA - Heavy infestation averaging 1 per 2 plants on eggplant in LaCrosse area, Alachua County. (Hunter).

CABBAGE APHID (*Brevicoryne brassicae*) - CALIFORNIA - Heavy on mustard in Imperial County. (Cal. Coop. Rept., Mar. 15). TEXAS - Light to medium infestation on cabbage in Dimmit County. (Richardson).

CABBAGE LOOPER (*Trichoplusia ni*) - LOUISIANA - Averaged one larva per plant in 10 acres of cabbage in Iberville Parish. (Oliver).

Spring Potato Psyllid Survey - 1957: A survey made March 12 to 21 showed very high potato psyllid (Paratrioza cockerelli) populations occurring on wild host plants in the spring breeding areas in the Southwestern States. They were particularly high in areas east of the Rocky Mountains, which is the source of psyllids that later move into the summer breeding areas east of the mountains in Colorado, Wyoming and Nebraska. Populations at Big Spring, Texas, averaged 516 per 100 sweeps, which is the largest number ever recorded for this area. Also at San Angelo current checks showed an average population of 184. This is the largest number recorded for that area. A population of 17 at Del Rio indicated that psyllids were moving out of this overwintering area to areas further north and west. Record high numbers of 129 and 158 were found at Marathon and El Paso, Texas, respectively. West of the mountains in central Arizona and southern California high population averages of 95 and 143 respectively were found. Very large numbers of eggs were observed on the host plants in the central Arizona area. These high psyllid populations indicate the likelihood of large northward movement during May and June into the potato and tomato growing areas of Colorado, Utah, Wyoming, and Nebraska, if favorable weather conditions occur at the time of the movement. (PPC, ENT and Coop. States).



Figures = average number of psyllids per 100 sweeps

ONION PLANT BUG (Labopidea allii) - TEXAS - Light to medium infestation in one onion field in Montgomery County (Davis) and light in Brazos County (Garner).

ONION THRIPS (Thrips tabaci) - TEXAS - Light to heavy infestation on untreated onions in Winter Garden area. (Richardson). Light on garden onions in Brazos County. (Garner).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - LOUISIANA - Reinfestations found in Winn Parish. GEORGIA - Planting restriction removed from Harris and Troup Counties where eradication apparently effected. (PPC, Sou. Reg.).

SPIDER MITES - LOUISIANA - Tetranychus lobosus and T. telarius heavily infesting strawberry foliage in Tangipahoa Parish. Many control attempts failed. (Oliver).

STRAWBERRY ROOT APHID (Aphis forbesi) - LOUISIANA - Lightly infesting strawberries in Tangipahoa Parish. (Oliver).

STRAWBERRY ROOTWORM (Paria sp.) - TENNESSEE - Heavy infestations in east Tennessee on a Hancock County strawberry planting. (Mullett).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Inspection of surface debris in southern area found much lower number of live specimens than last season. Inspection of standing stalks and surface debris indicate survival in considerable numbers in eastern part of Lubbock district and in San Angelo district of west Texas. In El Paso area, mortality is running high. In Cottle County, limited soil inspections indicate large numbers entered hibernation. (PPC, Sou. Reg.). OKLAHOMA - Summary of annual stalk and debris inspection in 16 eastern counties: Of 162 fields checked, 20 infested bolls found from standing stalks and 4 from surface debris. Six live and 23 dead larvae recovered from bolls from standing stalks while one live and 3 dead larvae found in bolls from surface debris. (Coppock).

APHIDS - TEXAS - Have appeared in lower Rio Grande Valley but not damaging. (Deer).

A THRIPS (Scirtothrips sp.) - ARIZONA - Caused severe crinkling of top leaves on several acres of cotton at Queen Creek, September 28, 1956. Genus has one generation a year; therefore damage probably secondary. Det. by K. O'Neill as possibly new species. (Ariz. Coop. Rept., Mar. 22).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A PINE SAWFLY (Neodiprion taedae linearis) - ARKANSAS - Infestation in Ashley, Cleveland, Dallas, Bradley and Calhoun Counties observed March 12 to 14. Eggs began hatching week of February 25, which is earliest record in State. Previous record March 6. By week of March 11, hatching nearly complete. Majority larvae first and second instars. (Warren, Holt).

A PINE TIP MOTH (Rhyacionia sp.) - ARKANSAS - Caused considerable damage past year to new pine plantings in south and central areas. Emergence of overwintering brood practically complete but potential damage cannot be estimated on present knowledge. (Warren).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - ARKANSAS - First colonies observed in Ashley County, March 12 and in Union County, March 14. Feeding activity just begun. (Warren).

APHIDS - OKLAHOMA - Severe infestations on pines in Hartshorne. (Goin).

SOUTHERN RED MITE (Oligonychus ilicis) - NORTH CAROLINA - Local heavy infestation on camellias and azaleas in Guilford County. (Wray).

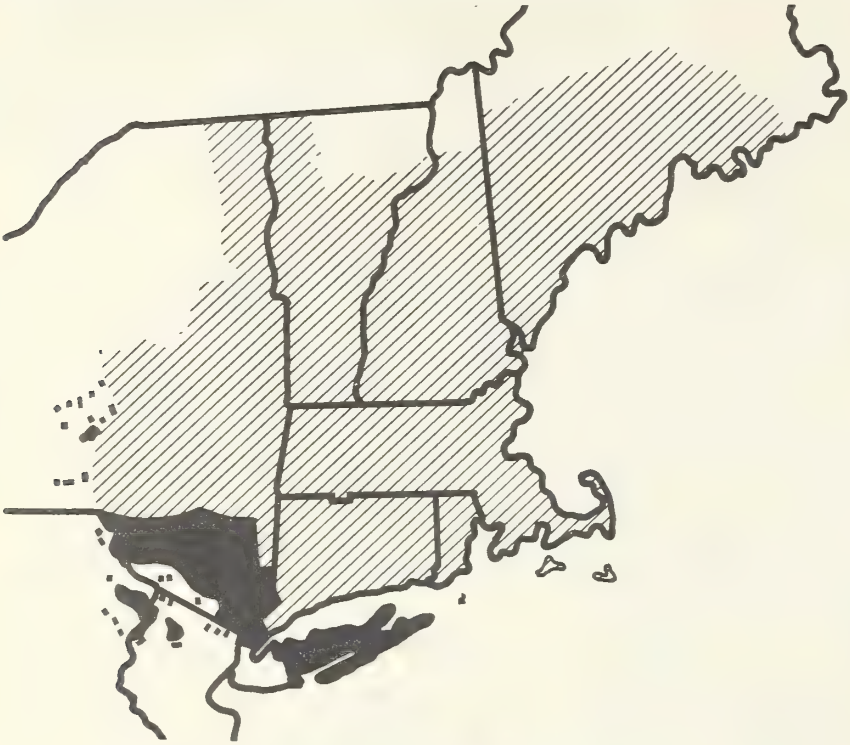
TEA SCALE (Fiorinia theae) - SOUTH CAROLINA - Camellia heavily infested at Orangeburg. Hatching begun, March 15. (Nettles, Kearse, Ackerman).

A SCALE (Aspidiotus candidula)- CALIFORNIA - Taken on mesquite and mistletoe, infesting mesquite at Bard, Imperial County. First record for State. Det. McKenzie. (Cal. Coop. Rept., Mar. 15).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NEBRASKA - Causing serious damage to elms as far west as McCook, Red Willow County. (Andersen).

A BANDED ASH BORER (Neoclytus capraea) - NEBRASKA - Adults emerging early; indications that infestation greater than any time in recent years. (Roselle).

Cooperative Spray Program Against Gypsy Moth in Northeast - 1957



▨ Area generally infested with gypsy moth -- about 38 million acres in 9 States.

■ Spot infestations and generally infested areas to be sprayed under Federal and State contracts in 1957 -- 2,950,000 acres in 3 States.

Aerial spraying will begin in April in an effort directed at eradicating the pest from the Northeastern States. Areas to be sprayed include: NEW YORK -An estimated 2,540,000 acres, including all of Suffolk County and part of Nassau County on Long Island; all of Putnam County; most of Westchester, Sullivan, Rockland, Orange, and Ulster Counties; and parts of Broome, Chenango, Madison, Oneida, Otsego, Cortland, and Dutchess Counties. NEW JERSEY and PENNSYLVANIA - An estimated 410,000 acres, including parts of Bergen, Passaic, Morris, Sussex and Warren Counties in New Jersey, and parts of Wayne, Pike and Monroe Counties in Pennsylvania. (PPC).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS - OKLAHOMA - Heel flies active on cattle in Choctaw and Pushmataha Counties. (Goin). UTAH - Present in cattle many localities; little control practiced. (Knowlton). LOUISIANA - Approximately 2 per head in about 60 head of Brahma cattle in East Baton Rouge Parish. (Oliver).

MOSQUITOES-LA. - *A.sollicitans* very abundant in Plaquemine Parish where there are approximately 1000 visits a person per minute. Areas in Livingston, East Baton Rouge, Iberville and Ascension Parishes have heavy populations of *Aedes* and *Culex* species. (Oliver).

CHIGGERS - CALIFORNIA - Locality records show *Trombicula belkini* generally distributed over State and T. *batatas* occurring in southern San Joaquin Valley. (Cal. Vector News, Mar. 1957).

CORRECTIONS

BEET LEAFHOPPER (*Circulifer tenellus*) - TEXAS - CEIR 7(10): 173 - Old flax plants affected by a disease similar to curly top. Specimens submitted for identification. (Tex. Coop. Rept.).

DISTRIBUTION OF RANGE GRASSHOPPERS - CEIR 7(12): 226 - Number of *Psoloessa delicatula* (Scudder) should be 107.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES, NUN MOTH (*Lymantria monacha* L.) - CEIR 7(12): 227 - Under hosts following linden, *elm* should be added.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agro. yps.	Prod. orn.	Perid. marg.	Feltia subt.	Heliothis		Tri. ni.
						zea	vires.	
TEXAS								
College Station 3/2-20	55	10		8	1			
Beaumont 3/1-15	13	52		1	48			
Greenville 3/1-15	34	7		17	16			1
Weslaco 3/1-15	355	154	9	16	102	256	4	861
Winter Haven 3/1-15	165	178		75	87	100	3	110
Brownsville 3/10-16	5					11		13
LOUISIANA								
Baton Rouge3/16-21	8	11	3		35	3		1
TENNESSEE(Counties)								
Lauderdale 3/12-18	39	8	2	6				
Madison	17	2	1					
Lawrence	42	1	3	2				
Maury	19	6	2	2				
Robertson	1							
Cumberland	31	3		1				
Knox	5	2	1	1				
Greene	18	9	1	1				
Blount	1							
Monroe	43	12	2	3				
Johnson	3	1		2				
FLORIDA								
Monticello 3/12					3			
Quincy 3/12	5				13			
Homestead 3/6 *					3			
SOUTH CAROLINA (Counties)								
Florence 3/9-15	24	3	1	2	1			
Charleston 3/4-10	8	7	1		1			
Oconee 3/16-22	121	8	4	5				

*Also 1 *P. sexta*.

STORED PRODUCTS INSECTS

KHAPRA BEETLE (Trogoderma granarium) - NEBRASKA - Total of 33 establishments surveyed from January 1 to March 8 with negative results. Light infestations of T. glabrum, T. parabile and Attagenus spp. found. (Andersen).
Khapra Beetle Survey, Southern Region: Surveys in Alabama, Arkansas, Tennessee, Oklahoma and Texas during February were negative. (PPC, Sou. Reg.).

Stored Grain Insects: ARKANSAS - In Dewitt - Stuttgart area 225 bins were inspected. Of these, 116 were free of insects. Remainder infested with species as follows: Tribolium sp. - 8 bins, saw-toothed grain beetle - 14 bins, Angoumois grain moth - 1 bin, Indian-meal moth - 1 bin, lesser grain borer - 1 bin, Psocids - 51 bins. (Rouse).

BENEFICIAL INSECTS

LACEWINGS - ARIZONA - Numerous in Tucson with some oviposition. (Ariz. Coop. Rept.).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ARKANSAS - Infestation of 7 mounds on approximately 20 acres of nurseryland in Union County, March 14. State Plant Board personnel initiated blanket treatment and eradication measures, week ending March 22. (Warren). ALABAMA - Infesting 48 counties in State. Infestations heaviest in southwestern and south central areas. (Owen).

CLOVER MITE (Bryobia praetiosa) - UTAH - Invading some homes. (Knowlton). MARYLAND - Troublesome to homeowners in Baltimore County. (U. Md., Ent. Dept.).

BLACK CARPENTER ANT (Camponotus herculeanus pennsylvanicus) - MARYLAND - Heavy infestation in timbers of wooden frame house in Landover, Prince Georges County. (U. Md., Ent. Dept.).

BOXELDER BUGS (Leptocoris trivittatus) - UTAH - Annoying in several northern communities. (Davis, Knowlton).

ADDITIONAL NOTES

NEBRASKA - Damage by PALE WESTERN CUTWORM present in Cheyenne, Deuel, Keith, Perkins, Chase, Hitchcock and Hayes Counties. Very small larvae range from 0 to 20 per linear foot of wheat. SPOTTED ALFALFA APHID not found in Platte and Republican River Valleys or in southeast area. (Andersen).

ALABAMA - PEA APHID injuring crimson clover in central area. (Blake). TERMITES numerous and swarms emerging various areas. (Arant). Moderate to heavy CATTLE GRUBS infestations during past winter in cattle. (Adkins). CLOVER ROOT CURCULIO damaged lupine in Samson vicinity. SWEETPOTATO WEEVIL found for first time in Marengo County. Entire southwest quarter of county infested. Stored potatoes unfit for human or livestock consumption. (Owen).

PENNSYLVANIA - BULB MITE was very abundant on growing hyacinth bulbs where it was feeding on decayed areas and apparently eating into health tissues near roots. PINE BARK APHID severe on Scotch pine in Allegheny County. APHID eggs are generally very numerous in orchards. TERMITES are general in homes. Requests every day. A CERAMBICID (*Astylopsis macula*) found in numbers in livingroom of home in New Castle. Logs in fireplace suspected source. (Udine).

SOUTH DAKOTA - Additional surveys for EUROPEAN CORN BORER indicate a much higher percent survival over 1956. In northeast, average of 84 percent borers survived and in east central area, 85 percent borers survived. (Hantsbarger).

SUMMARY OF INSECT CONDITIONS - 1956

WISCONSIN

Reported by Wisconsin Cooperative
Insect Survey

Weather and Insect Activity: First readily noticeable insect activity was flights of cutworm moths which occurred on warm nights during first week in April. Then, cold, dry weather held insects in check rest of April. From May 1 to 30, cool weather and precipitation interspersed by only few warm days retarded normal insect advances. Midsummer temperatures in June, and perhaps accelerated insect development, reached a peak for the season during or by the third week. Cool weather altered course of many insects during the last week in June. Normal temperatures occurred occasionally but, July's weather was cooler and wetter than normal, which interferred with the progress of many insects. These conditions extended into the second week of August when temperatures rose only to drop for a series of intermittent cool periods beginning the fourth week of August, and continued until a killing freeze September 18-20 terminated many insect host plants. October was quite dry and one of the warmest on record which permitted some insects, especially aphids, to build large populations. Insect activity was terminated for the season by cold weather during the latter half of November. It appears as though cool temperatures during the growing season kept 1956 insect damage as low as could be expected.

Highlights: First JAPANESE BEETLE trapped in Wisconsin was near Milwaukee transportation terminals. Survey uncovered no further evidence of pest. It is assumed the beetle "hitch-hiked" into the State. SPOTTED ALFALFA APHIDS identified for the first time. AN ELM SAWFLY (*Arge scapularis*) was also found for the first time. MEXICAN BEAN BEETLE continued to exist in Dane County; Waukesha County was recorded as a new location. JACK-PINE BUDWORM was spectacular in 1956 because it more than tripled the forest area it defoliated in 1955. WHITE PINE WEEVIL, while always a problem, appeared to be getting worse. Known range of SMALLER EUROPEAN ELM BARK BEETLE was extended and appeared to be replacing the NATIVE ELM BARK BEETLE in areas where both were present.* APPLE MAGGOT was worse in 1956 than for past decade. SWEETCLOVER APHID taken from sweetclover in Vernon, Crawford and Grant Counties for the first time. Black light traps operated for the first time in connection with the cooperative economic insect survey proved to be a valuable aid. Only one new location of the POTATO ROT NEMATODE was found.

Cereal and Forage, Potato and Pea Insects: POTATO LEAFHOPPER (*Empoasca fabae*) was first swept on May 16, from Grant County alfalfa, and had built large populations in many fields by June 22. Preceding June 22 estimates of 15-25 leafhoppers per plant on blooming potatoes made in Pepin County, infestations on snap and lime beans ranged from light to heavy. Heavy populations were supported by alfalfa as well as potatoes, and reduced potential yields of second crop alfalfa in widespread areas of the State by the first part of August. Leafhopper damage was as serious as observed in worst years by August 10. Treatments applied to potatoes avoided severe losses. During first part of May EUROPEAN CORN BORER (*Pyrausta nubilalis*) survival ranged between 75 and 90 percent in four southern counties. Parasitism by *Lydella grisescens* was 10.4 percent which was about the same as in 1955. It appeared as though the borer potential for the spring of 1956 was high. Hatching of second-brood eggs was as high as 90 percent in southern counties but considerably behind northward. Borer potential failed to develop and losses were relatively low. An average of 23 borers per 100 plants was found in the fall abundance survey, and many larvae looked less thrifty compared with 1955. In 1956, borer caused estimated loss of $1,295,000 to dent corn in State. Cool and wet weather in 1956 apparently prevented high GRASSHOPPER potential from developing in legume fields. Hatching began during the first week in June, and nymphs were numerous in fields with exposed soil in many counties by the end of June. Egg hatching was delayed, erratic and extended over a long period in fields with a heavy forage cover. Early hatches disappeared. *Melanoplus femur-rubrum* hatching appeared to be complete by August 15, but mortality was high and nymphal development retarded. A warm relatively dry October permitted populations from being reduced further and allowed survivors time for egg deposition. An increase in Melanoplus differentialis was noted and Camnula pellucida was observed for the first time in several years along roadsides in Oneida County. In 1956 grasshoppers were relatively low in importance when compared with the spring potential. PEA APHID (Macrosiphum pisi) was found in alfalfa in most counties south of a line from Chilton to Platteville by May 19. Counts ranged up to 120 aphids per sweep. Aphid populations increasing rapidly. Early peas needed treatment by June 22 in southern sections . Increase in later peas ; with some fields needing treatment. Populations lagged considerably behind in central and west-central sections. Infestations were never uniform in northeastern, north central or western Wisconsin peas, yet most fields needed treatment. Treatment was applied to peas in time for satisfactory results. Some acreage required repeated treatments because of rapid increase. Estimated losses due to aphid damage was less than $100,000 and treatment costs exceeded $550,000. After heavy freeze throughout most of the State on September 18-20, pea aphids were numerous in alfalfa and red clover fields. Fungus killed aphids were abundant. Exceptionally heavy populations caused many alfalfa fields to brown by October which led to the speculation of possible alfalfa winter injury. Pea aphid populations in 1956 were higher than they have been for the past four years. Small numbers of TARNISHED PLANT BUG(Lygus lineolaris) adults were present in most southern alfalfa fields by May 19, and hatching of RAPID PLANT BUG (Adelphocoris rapidus) and ALFALFA PLANT BUG (Adelphocoris lineolatus) nymphs occurred during the following week in Rock County. By June 15, heavy populations of these plant bugs were reported, especially from central area, but somewhat less numerous in west central area. By August 10, the damage to alfalfa caused by both leafhoppers and plant bugs was evaluated as the worst in several years. Insignificant numbers of adult CORN EARWORM (Heliothis zea) were recorded until August-September. Larvae were numerous in untreated sweet corn by September 15, and counts ran as high as five and half per ear in Rock County on September 20. Loss estimates to corn exceeded $1,000,000. First ARMYWORM (Pseudaletia unipuncta) adults were trapped on May in Dane County and the last during the third week in September. Adults and larvae were observed most of the season throughout the State. No outbreaks were reported although around July 20 adults were increasing in light trap catches and larvae were more commonly observed. Small grains were infested with several insects which did not produce catastrophic results, but yet were worthy of consideration. HESSIAN FLY (Phytophaga destructor) infestations on spring wheat in southeastern counties may have been somewhat heavier with light to moderate infestations reported at Madison except for late wheat which had 80 percent of the plants affected. The "dwarfing" caused by this insect was similar to injury caused by frit flies which also were present. ENGLISH GRAIN APHID (Macrosiphum granarium) was the predominant aphid species on small grain throughout the State. Virus diseases,"red-leaf" of oats and "yellow-dwarf" of barley, spread by aphids were not uncommon and perhaps more general in the State than in past years. Viruses and aphids caused estimated loss of one percent on State's 2,750,000 acres of oats and three percent loss on 73,000 acres of barley. A large population of WHEAT WIREWORM (Agriotes mancus) in small grain was observed the first week in June with damage reported the following weeks in Taylor, Wood, Clark and Lincoln Counties. Many dead or damaged heads of oats, wheat and barley were observed. Most damage appeared to have been the result of WHEAT STEM MAGGOT (Meromyza americana) which was heavier and more widespread than normal. CHINCH BUG (Blissus leucopterus) was observed on barley and corn in Kenosha and Racine Counties by July 8. Although a fall survey along the southern border indicated it to be more numerous than for many years, populations were classed as non-economic. Although SPOTTED ALFALFA APHID was identified for the first time in Wisconsin in 1956 it caused no known significant damage to alfalfa. Aphids collected October 13 were identified first, but it appears first infestations were earlier. Newly-hatched MEADOW SPITTLEBUG (Philaenus leucophthalmus) nymphs were common on alfalfa in southwestern area by May 25; 44 per 100 stems in Dane County. By the middle of June, heavy populations were reported from many counties. BILLBUG (Calendra sp.) injury to corn was reported from several counties, June 1. CLOVER LEAF WEEVIL (Hypera punctata) larvae were found in nearly all fields examined in southwestern area by May 19, and fungus-infected larvae were found in most of these fields. A survey, first week in June, between Dane and Burnett Counties showed 86 percent of the corn fields had SEED-CORN MAGGOTS with 6.7 percent of plants infested with maggots or pupae.

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*Dutch elm disease identified for first time in State.

A very heavy infestation of canning wax beans planted the last of July occurred in Dane County. At least two species of BLISTER BEETLES were common in many alfalfa fields by June 15. First reports of COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) came from Marathon County, week ending June 15, with egg hatching beginning the following week in Portage County. The one new field found infested with POTATO ROT NEMATODE (*Ditylenchus destructor*) in 1956 was on a previously infested farm. A total of 786.3 acres in 40 fields on 27 farms have been classed as infested. All of the infested acreage except one acre in Kenosha County is in Langlade County.

Truck Crop and Small Fruit Insects: First SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) trapped in Kenosha County on May 11. A heavy migration immediately followed, with infestation moving from Prairie du Chien to Lake Superior and to Lake Michigan within a week, but populations were slow to develop in northeastern area. Counts were four per corn leaf in Pepin County week ending June 22, and the following week very heavy on lettuce and carrots. By August 10, populations had declined but lettuce and carrots on muck soils north of Madison were heavily infected with aster-yellows virus. Lighter virus infections occurred in southeastern area. POTATO FLEA BEETLE (*Epitrix cucumeris*) populations were very heavy on potatoes and troublesome the first week of June on tomato transplants. Flea beetles were more numerous on sprayed potato fields in 1956 than previously, since they are showing some resistance to DDT. POTATO APHID (*Macrosiphum solanifolii*) populations remained low over most of the State. SPOTTED CUCUMBER BEETLE damaged snap beans in Wood County the first week in July. Heavy populations of STRIPED CUCUMBER BEETLE (*Acalymma vittata*) were on cucumbers in Waushara County by last of June with lighter infestations in northeastern and southeastern areas. Treatment was extensive and the problem extended until the last of July. Hot dry weather prevented any problems with ONION MAGGOT (*Hylemya antiqua*). Light populations of IMPORTED CABBAGEWORM (*Pieris rapae*) were laying eggs in many counties by July 6 and populations continued to build up for the rest of the season. CABBAGE LOOPER (*Trichoplusia ni*) were trapped during most of the season after June 15, but were slow in developing populations and damage was nowhere near that of 1955. DIAMONDBACK MOTH (*Plutella maculipennis*) was heavier than for several years over most of State. CABBAGE APHID (*Brevicoryne brassicae*) infested 20 percent of the plants in one Marquette County field by July 29. A BEETLE (*Strigoderma arboricola*) was heavy on soybeans and snap beans the first week of July in Wood, Dunn and Pepin Counties. SQUASH VINE BORER (*Melittia cucurbitae*) damage was reported from Jackson, Walworth and Dane Counties. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) caused heavy and extensive damage to strawberries especially in western Wisconsin by June 22, and heavy on red raspberries. STRAWBERRY LEAF ROLLER(*Ancylis comptana fragariae*) was light in many western and central Wisconsin plantings in June. Second-brood populations were moderate in Dane County by August 10. RASPBERRY CANE BORER (*Oberea bimaculata*) laid eggs, girdled canes and killed tips of new canes in western Wisconsin the third week in June and the following week in other areas. Infestations appeared heavier and more extensive than for several years. RED-NECKED CANE BORER (*Agrilus ruficollis*) populations were more numerous and widespread than for several years. CRANBERRY FRUITWORM (*Acrobasis vaccinii*) - Egg laying reached a peak during the third week in July at the same time first-hatched larvae were one-third grown.

Orchard Insects: All stages of RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) were present in southern area orchards during the first week in July. During the third week, adults were very numerous in Crawford County. A heavy flight of APPLE MAGGOT (*Rhagoletis pomonella*) occurred on July 9, and adults continued to emerge thereafter. Populations were heavier and more troublesome in Wisconsin than any time in the past decade. Losses were great. PLUM CURCULIO (*Conotrachelus nenuphar*) counts were light in Crawford County May 25, and egg laying was nearly complete by June 15. This insect was also common in Door County. CODLING MOTH (*Carpocapsa pomonella*) larvae were entering fruit prior to June 15 in southern Wisconsin, but adults were trapped first in Door County on June 10. Heaviest population in five years was reported from Crawford County, and Rock County also had heavy populations. EYE-SPOTTED BUD MOTH (*Spilonota ocellana*) larvae were active in Crawford and Dane Counties before the last week in May. High populations were reported in Door County where it was troublesome early on cherry and apple foliage and immature fruit. There was considerable damage to apples in August in Door County. ROSY APPLE APHID (*Anuraphis roseus*) and APPLE APHID (*Aphis pomi*) populations were high in some orchards in Door County by August 3. EUROPEAN RED MITE(*Metatetranychus ulmi*) populations were quite high, but weather suppressed damage in Door County.

Forest, Ornamental (outdoor) and Shade Tree Insects: JACK-PINE BUDWORM (*Choristoneura pinus*) populations continued in outbreak numbers in northwestern area, and in Oneida County but with somewhat of a decline in Marinette County. The area of medium to heavy jack-pine defoliation in the northwestern area increased from 62,000 acres in 1955 to about 200,000 acres in 1956. Twenty-two thousand acres were treated. Larvae became active in early May. In Polk County there was about 95 percent pupation by July 1. Widespread infestations of WHITE-PINE WEEVIL (*Pissodes strobi*) occurred chiefly in white-pine plantations in the northern one-half of State. Extensive damage has resulted. Norway spruce, jack pine, Scotch pine and red pine were other hosts infested. FOREST TENT CATERPILLAR (*Malacosoma disstria*) infestations occurred from Douglas County east to Iron County. Other, spotty, severe infestations extended throughout northwestern counties while lighter infestations were general in aspen areas in the northern one-third of State. Hatching began the second week in May. Pupal parasitism was high in several locations. In mid-June where forest tent caterpillars were most numerous, heavy populations of the parasite *Sarcophaga aldrichii* were annoying. Surveys found SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatis*) infested elm trees in nineteen counties, and in logs at processing plants only in five others. A heavy peak emergence was around June 15. Counts on May 24, in Waukesha County, showed two-thirds pupation of overwintering larvae and 4 percent partially sclerotized adults. Counts of larvae in standing elm at Madison showed 47 percent mortality, following a minus eleven degree F. temperature on December 13. Dutch elm disease was identified from 63 elm trees in six southeastern counties. Beetles had been found previously in all of these counties. EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) larvae were observed on mugho, Scotch, jack, Swiss-mountain, Austrian, red, and also white and limber pine mixed with other hard pines. Mugho pine had a spring infestation estimated at ten larvae per plant in Racine. In Rock County, first moth emergence on caged mugho pine was June 16. PERIODICAL CICADA (*Magicicada septendecim*) nymphs emerged in Richland County the first week in June. Fairly large numbers observed in most counties across the southern tier and extended as far north as Sauk and Richland Counties. Oviposition injury to twigs caused considerable "flagging" on oak and damage to some orchards. EUROPEAN ELM SCALE (*Gossyparia spuria*) egg-laying was nearly completed about June 15 in southern Wisconsin. Heaviest infestations for several years occurred in Dodge, Dane, Jefferson and Milwaukee Counties. SADDLED PROMINENT (*Heterocampa guttivitta*) was present in Door County again in outbreak numbers chiefly above the 45th parallel The most severe defoliation of sugar maple and beech occurred in the Peninsular Park area and outlying islands. At the end of the first week in August high mortality caused by an unidentified disease of the larvae in areas of heaviest defoliation was noted. Pupal predation and parasitism was observed in November to be high. RED-PINE SAWFLY (*Neodiprion nanulus*) occurred in outbreak numbers locally at the Poynette game farm where pole-sized red pine was severely defoliated in May and June. Young red pine was also severely defoliated in the University of Wisconsin arboretum. Elsewhere it was common on red pine growing in the open. SWAINE JACK-PINE SAWFLY (*Neodiprion swainei*) was reported from Dane County for the first time. BALSAM GALL MIDGE (*Itonida balsamicola*) continued to be a problem in northeastern counties. FALL WEBWORM (*Hyphantria cunea*) appeared to be more prevalent than in 1955, as far north as Wood and Marathon Counties. WHITE-MARKED TUSSOCK MOTH (*Hemerocampa leucostigma*) was more numerous than for years. Reports from Brown, Waushara, Milwaukee and Sheboygan Counties indicated considerable defoliation and greatest problems were chiefly on municipal elm, basswood and horse chestnut in eastern area. First reports of JUNE BEETLE (*Phyllophaga* sp.) adults were from Sawyer County on May 7. Heavy flights May 26 in Wood County were observed, and adults feeding and mating on raspberry canes were numerous. Biggest catches in traps were between June 5-15 in same county. Heavy beetle feeding damage was reported on oaks in Vernon and other counties. Grub damage to corn was reported from Calumet County. Numerous ROSE CHAFER (*Macrodactylus subspinosus*) reports were received from widespread areas indicating heavy adult populations on many ornamental hosts beginning shortly before June 22. Locations were chiefly in light soil areas in central and western sections, and infestations in corn were reported from Chippewa, Marquette and Winnebago Counties. Unsuccessful attempts at control were attributed to migrations entering an area treated rather than insecticidal failure.

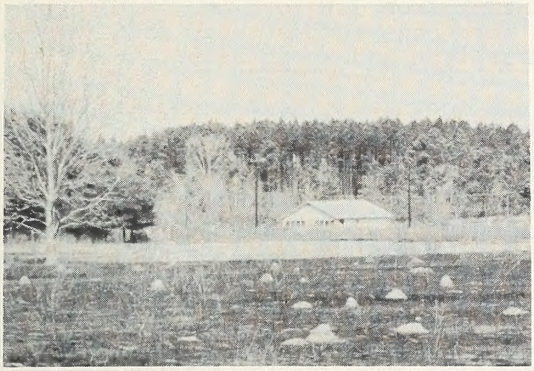
Man and Animal Insects: AMERICAN DOG TICK (*Dermacentor variabilis*) was reported from Sauk County and found to be troublesome in Eau Claire County in May. DEER FLIES were very numerous over large areas, especially northern lowlands, by June 22. The first major MOSQUITO emergences in southern Wisconsin occurred during the last week of May, which was about three weeks later than normal. The principal woodland mosquito, *Aedes sticticus*, emerged on Memorial Day in the Baraboo area. A heavy emergence of *Aedes vexans* and *Aedes trivittatus* occurred the last of August and first of September in southern Wisconsin counties, which was an unusually heavy peak for that time of the year. However, at no time did mosquito populations approach those of 1954. The PARASITIC FLIES (*Sarcophaga aldrichii*) were very numerous and greatly annoyed humans in June, in areas of the State where forest tent caterpillar populations were high. HORN FLY (*Siphona irritans*) and STABLE FLY (*Stomoxys calcitrans*) populations were about normal in 1956. CLUSTER FLY (*Pollenia rudis*) populations were about normal in 1956, and much lower than in 1954.

Industrial, Storage, Greenhouse and Household Insects: Observations were made in 1,335 grain handling establishments for KHAPRA BEETLE (*Trogoderma granarium*) with negative results. CARPET BEETLES were observed in many of these locations. While control efforts were required for GREENHOUSE PESTS, these problems remained about the same. About 50 percent of the problem could be attributed to spider mites, about 25 percent for aphids, about 5 percent each for whitefly, symphylids, and 15 percent for other pests. Numerous inquiries and reports about household pests but these problems remained about the same except, perhaps, for an increase in ant problems, particularly carpenter ants. Effective control efforts have lessened numbers of insects which cause industry a problem. However, CHEESE MITES continue to be a problem in cheese factories and cheese warehouses, as are CARPET BEETLES in relation to dried milk products.

Beneficial Insects: HONEY BEE populations were slow to build because of cold, retarded spring weather. Package bee shipments into the State were heavy the last half of May which, perhaps, was three weeks too late for maximum benefits. Relatively low populations began working on the early honey flow June 10, in western area. There was no long honey flow to stimulate brood rearing, and as a result populations were lower than normal for pollination purposes and honey production was below normal also until about the first week in August. Conditions prior to August 1, were very favorable for *Nosema apis* development. Favorable weather in August and September allowed normal development of fall populations. In some locations honey dew gathered by bees from the heavier than normal aphid populations on legumes produced questionable winter stores. Out of a total of 36,871 colonies of inspected bees in 3,112 apiaries where problems with American foulbrood (*Bacillus larvae*) were suspected, 894 were found to be infected and were destroyed. Figures also showed that about 25 percent of those who formerly had bees, had bee equipment in 1956 but had no bees.

IMPORTED FIRE ANT (Solenopsis saevissima v. richteri Forel)

Economic Importance: This introduced pest, through its foraging and mound building, is destructive to many agricultural crops and it is said to injure young livestock and wildlife in some instances. Its bite and sting are vicious, often interfering with labor activities in fields in infested areas. Reports indicate that the species is responsible for serious damage in pastures, meadows and other forage lands where mounds cause heavy damage to mowers and other machinery. Loss on improved pasture land, including damage to machinery from mounds and loss in seed and hay, in Dallas County, Alabama, in 1952 was estimated at $40,000. Counts of 50 to 75 mounds per acre are common in some parishes of southern Louisiana. On crops it damages germinating seeds, roots, stems and young growth. Observations in Baldwin and Mobile Counties, Alabama, in 1951 showed 5 percent or $4,000 damage to 400 acres of cabbage; 10 percent or $5,000 damage to 75 acres of broccoli and $7,000 loss on 75 acres of okra.

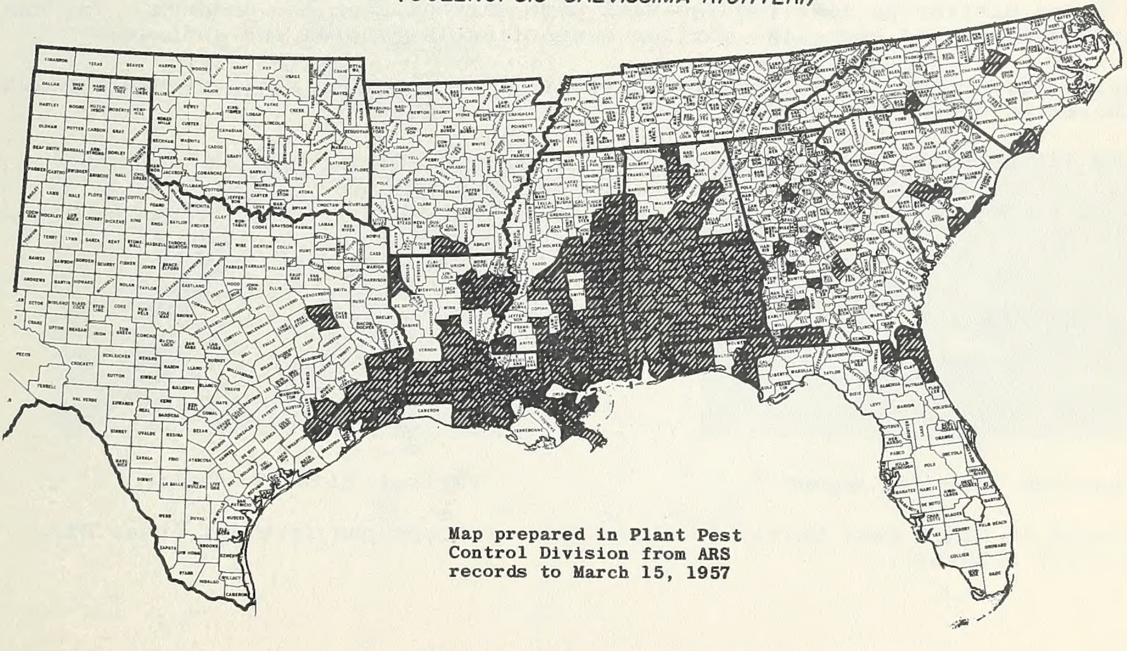


Imported Fire Ant Mounds

Distribution: Imported fire ant is believed to have been introduced into the United States at Mobile, Alabama, prior to 1920 but was not reported until 1930. It is now known to occur in areas of nine Southern States with heaviest infestations in Alabama, Mississippi, southern Louisiana and western Florida. The chief avenues of natural spread seem to be through nuptial flights; however, the insect may be spread by floods or in water-borne materials. By artificial means, dissemination can occur through movement of infested soil, nursery stock, gravel, logs, forage and through transportation conveyances. Outside the United States, the ant is reported from Argentina, Brazil and Uruguay.

KNOWN DISTRIBUTION OF IMPORTED FIRE ANT

(SOLENOPSIS SAEVISSIMA RICHTERI)



Map prepared in Plant Pest Control Division from ARS records to March 15, 1957

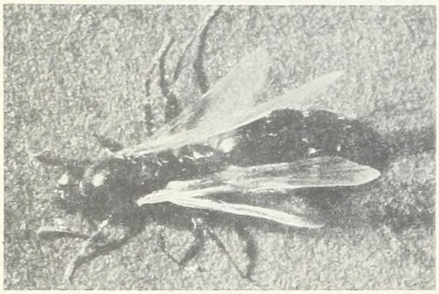
Life History and Habits: The queen, after the mating flight, begins the colony by digging an underground chamber in which she lays the first eggs in clusters of 10 to 15. For subsequent broods, the number of eggs per cluster is increased from 75 to 125 and hundreds of eggs may be deposited. The first brood is tended almost constantly by the queen, the larvae being fed from food stored in her own body. Workers from this brood are responsible for building the mound and future maintenance of the colony, except for egg-laying. The life cycle is as follows: egg stage 8 to 12 days, larval 6 to 12 days and pupal 9 to 16 days. Although mounds vary in size up to 3 feet or more in height, the usual is about 10 inches tall and 15 inches in diameter. New colonies appear to prefer moist ground but once established, they are able to maintain themselves in very dry situations. The ants may move their mounds for considerable distances but usually not more than 20 to 25 feet. Observations in southern Alabama indicate that imported fire ant is more prolific than any of the native species and where it occurs other ants are scarce.

Key to the larger species of fire ants Solenopsis, subgenus Solenopsis: Ants of this subgenus are highly variable in size ranging from 1.6 to 6 mm., and usually have more individuals per colony and more conspicuous nests than those of the smaller fire ants of the subgenera *Diplorhoptrum* and *Euophthalma*.

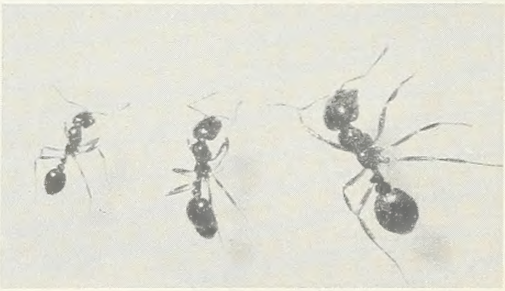
1. Mandibles strongly incurved, sometimes toothless; head unusually large, bilobed posteriorly; anterior border of mesospleura with irregular teeth or projections; petiole in profile, very thin (anteroposteriorly)--Tropical fire ant, *Solenopsis geminata* (F.).
2. All characters not as above. Antennal scape long, the apex almost reaching the posterior border of the head; head noticeably longer than broad and without strongly convex sides, dorsal surface of head with large, coarse, scattered punctures; mandibles 4-toothed; mesopleura distinctly sculptured, rather opaquish--Imported fire ant, *S. saevissima* var. *richteri* Forel.
3. Antennal scape short, the apex lacking a great deal of attaining the posterior border of the head; head not much longer than wide and with noticeably convex sides, the dorsal surface without large, coarse, scattered punctures; mandibles 3-toothed; mesopleura weakly sculptured, mostly shining--Southern fire ant, *S. xyloni* McCook. (Original key by M.R. Smith, Ent. Res. Div., ARS).

Description: Adult worker - Typical specimens are dark brown to blackish except for base of abdomen which has an orange-colored band. General body color variable, some forms distinctly more reddish with some darkening on the abdomen. Two small enlargements on the stem-like portion connecting the thorax and abdomen.

Control: Recommended insecticides for control of imported fire ant are heptachlor, dieldrin, chlordane and aldrin.



Imported Fire Ant Queen

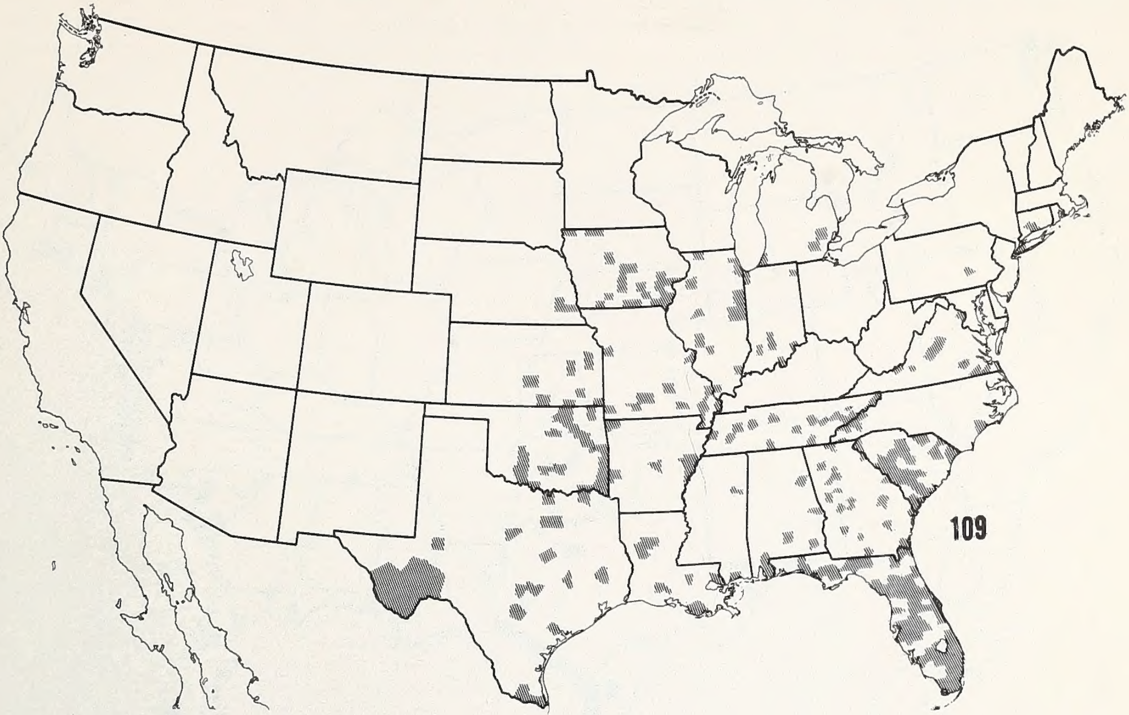


Various Sized Workers

(Prepared in Plant Pest Survey Section, PPC. Photographs from Ent. Res. Div. CEIR 7(13) 3-29-57).

DISTRIBUTION OF RANGE GRASSHOPPERS

Schistocerca americana (Drury) American grasshopper



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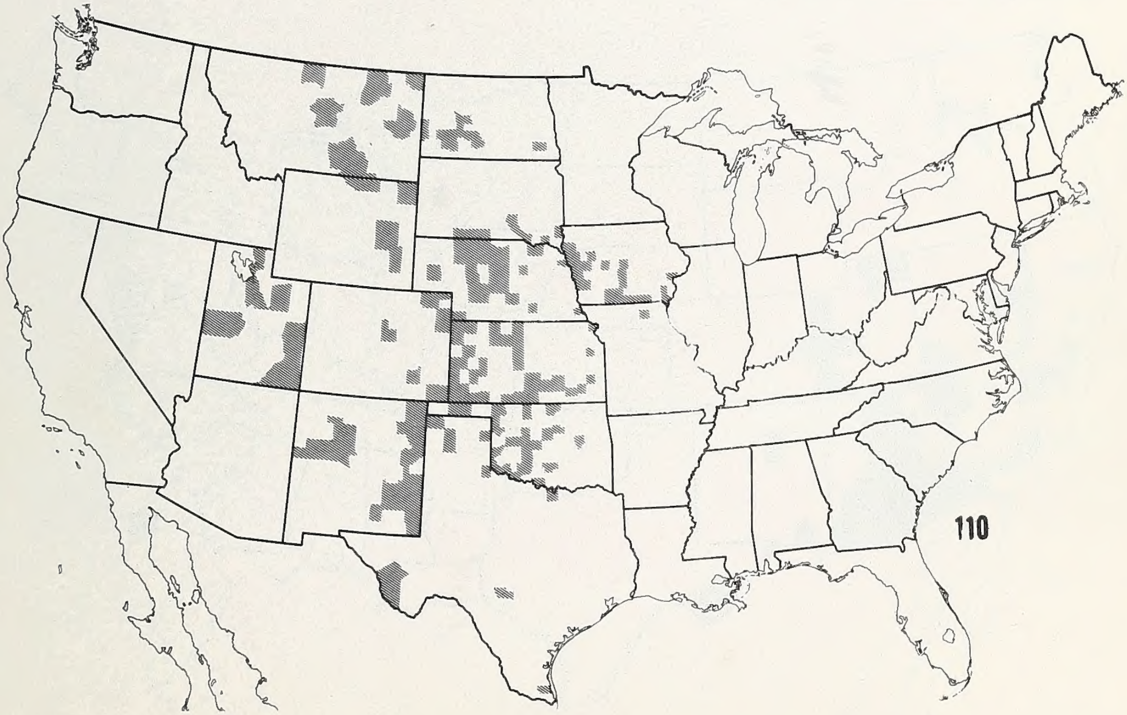
Schistocerca lineata Scudder



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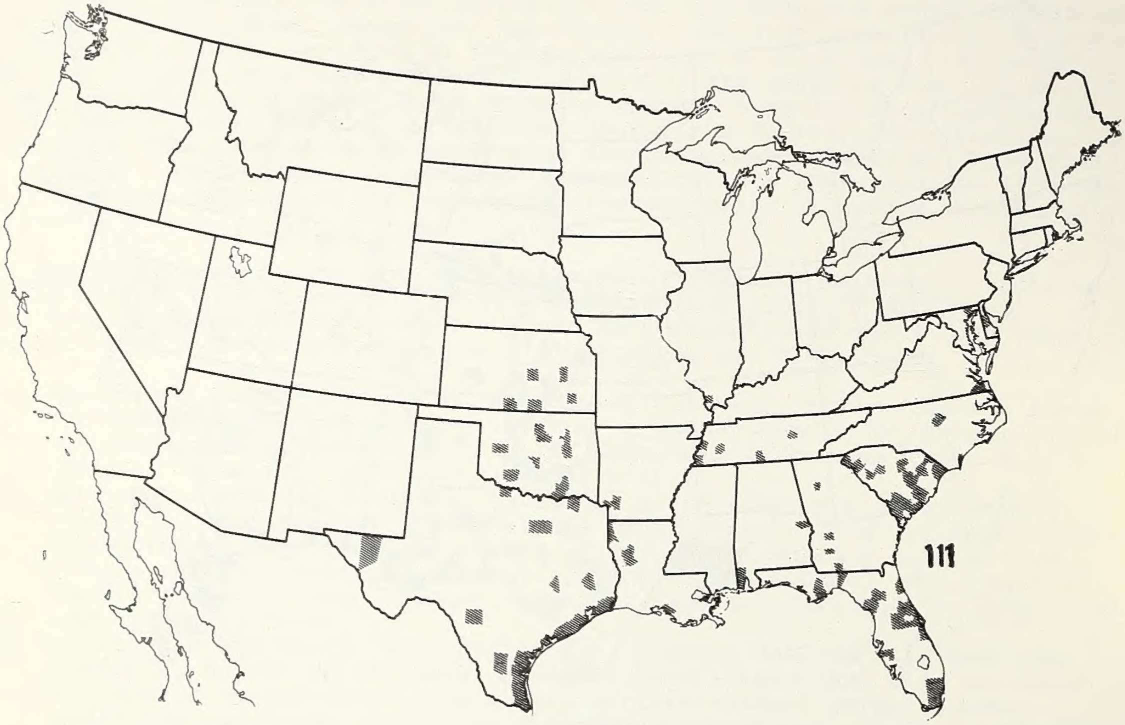
DISTRIBUTION OF RANGE GRASSHOPPERS

Schistocerca obscura (Fabricius)



Schistocerca shoshone (Thomas)